

ICHTHYOPHIS GLUTINOSUS.

Peters, in his recent monograph* of the Cæcilians, gives as localities for this species (the *Epicrium glutinosum* of Günther's 'Reptiles of British India,' p. 441,) Ceylon, Siam, and Java, and, on Günther's authority, South India, Khasi hills, and Tenasserim. So far as I am aware, no Pseudophidian has hitherto been recorded from the Himalayas.

I received four or five years since, from the late Mr. Mandelli, two specimens of this species, obtained near Darjiling, and I find, in the British Museum, two more from the same locality, procured by Dr. Jerdon. In both my specimens, and in one of Dr. Jerdon's, the lateral band is wanting, but there is no structural difference from other specimens.

XVI.—*Second List of Rhopalocerous Lepidoptera from Port Blair, Andaman Islands, with Descriptions of, and Notes on, new and little-known Species and Varieties.*—By J. WOOD-MASON, Deputy Superintendent, Indian Museum, Calcutta, and LIONEL DE NICEVILLE.

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(With Plate XIV.)

At the end of 1880, we contributed to this Journal an account of the Rhopalocerous portion of the collection of Lepidopterous insects formed during that year for the Indian Museum by Mr. F. A. de Roepstorff, an Assistant Superintendent on the Port Blair Establishment, to whose energetic labours zoologists are almost entirely indebted for such knowledge as they possess of the interesting Lepidopterous fauna of the Andaman Islands, for by far the greater number of the specimens belonging to both divisions of the order reported upon in 1877 by Mr. F. Moore was also collected by this officer. The collection sent to us in 1880 by Mr. de Roepstorff comprised no less than 90 distinct species, of which 25 had not been previously recorded. The present list is based upon a very fine collection (numbering more than 1000 specimens in the finest condition, and especially valuable as furnishing us with the opposite sexes of most of the species) sent to the Museum in instalments during the current year by the same assiduous collector, and it adds 22 fresh species to the fauna. In order to render it a record complete to the end of the year 1881 of the species of butterflies inhabiting the Andaman Islands, several corrections have been made in the paper since it was read, and a few additional species, together with the names of the few forms which have been recorded by Mr. Moore, but not

* Monatsbericht Ak. Wiss. Berlin, 1879, p. 931.

seen by ourselves, inserted with an asterisk prefixed to each of the latter to distinguish them from those of which we have received examples.

LEPIDOPTERA RHOPALOCERA.

Family NYMPHALIDÆ.

Subfamily DANAINÆ.

1. HESTIA CADELLI.

H. cadelli, Wood-Mason and de Nicéville, Journ. As. Soc. Bengal, 1880, vol. xlix, pt. ii, p. 225, pl., xiii, fig. 1 ♂.

Since our first paper was published, we have received numerous specimens of both sexes of this species from South Andaman from Mr. de Roepstorff.

♀. All the wings broader, with the markings of the same shape, situation, size, and shade as in the male, from which, in fact, the female differs in the proportions of the organs of flight just in the same manner as does *H. hadeni* ♀ from *H. cadelli* ♂ (*vide* J. A. S. B., 1880, Pl. XIII).

*2. HESTIA AGAMARSCHANA,† Felder.

Andaman Islands (*Felder*).

3. DANAIIS MELANOLEUCA, Moore.

4. EUPLŒA CORE, Cramer.

We have received no specimens of this common species since 1872, when the native collector Moti Ram forwarded a single example from Port Blair.

5. EUPLŒA ANDAMANENSIS, Atk.

Subfamily SATYRINÆ.

6. LETHE EUROPA, Fabr.

7. MELANITIS LEDA, Linn.

8. MELANITIS ISMENE, Cramer.

9. MELANITIS ZITENIUS.

Pap. zitenius, Herbst, Natur. Syst. Ins. Schmett. viii Theil, p. 5, pl. 182, figs. 1, 2.

The single male received from Mr. de Roepstorff has the round black spot on the yellow-red band of the anterior wings divided longitudinally into two parts by the yellow of the band, and the white pupil obsolete. In other respects, especially in its less falcate anterior wings, it agrees best with specimens in the Museum from Upper Tenasserim.

10. MYCALESIS (CALYSISME) PERSEUS, Fabr.

11. MYCALESIS (CALYSISME) DRUSIA, Cramer.

12. MYCALESIS (VIRAPA) RADZA, Moore.

† ? 'agamarsena' from ἀγαμος, 'unmarried,' and ἀρσην-ἄρσενος, 'male,' in allusion to the fact that the describer was ignorant of the opposite (female) sex.

13. ELYMNIAS COTTONIS, Hewitson.

Hewitson states that the sexes are alike in this species, but the three females before us have the outer margins of all the wings lighter with a more or less distinct submarginal rounded-angulate macular band in the anterior ones corresponding to the band of blue spots in the males of *E. undularis*, and in two specimens two, and in the other four, distinct whitey-brown spots, the blurred pupils of the obsolete ocelli of the underside showing through, on the upperside of the posterior wings; below, they are much lighter than the males, the subapical triangular patch of lilacine ground-colour in the anterior wings and the submarginal lilacine ground of both wings, but especially in the posterior pair, being whiter and consequently more distinct than in the male; there are also six pupils of ocelli instead of one distinctly traceable, and the anastomosing chestnut striation besides being lighter is less confluent. The females, in fact, much resemble the males of *E. undularis*. Hewitson makes no mention of the beautiful rich deep plum-colour which suffuses the dark parts of the upperside in both sexes almost equally, nor of the faint red-violet reflections emitted by the light borders.

Danais plexippus, the model of the females of the allied continental form, has not yet been detected at Port Blair.

Subfamily MORPHINÆ.

14. AMATHUSIA PHIDIPPUS, Linn.

Two males and one female.

15. DISCOPHORA CELINDE, Stoll.

Two males.

Subfamily NYMPHALINÆ.

16. CETHOSIA NIKOBARICA, Felder.

17. ATELLA ALCIPPE, Cramer.

*18. CIERHOCHROA ANJIRA, Moore.

19. CIERHOCHROA THAIS, Fabr.

20. CYNTHIA EROTA, Fabr.

21. MESSARAS ERYMANTHIS, var. NIKOBARICA, Felder.

22. PYRAMEIS CARDUI, Linn.

23. JUNONIA CENONE, Linn.

24. JUNONIA ASTERIE, Linn.

25. JUNONIA ALMANA, Linn.

26. DOLESCHALLIA BISALTIDE, Cr.

27. KALLIMA ALBOFASCIATA, Moore.

The underside is, as might have been expected, excessively variable.

28. EURYTELA HORSFIELDII, Boisduval.

A single specimen of the very differently coloured female.

29. *CYRESTIS COCLES*, var. *ANDAMANICA*, nov.

Our single male differs from a continental (Sylhet) one in the Museum collection only in its larger size, whiter ground-colour throwing up the slightly darker markings, in the finer and rather indistinct submarginal black lines of all its wings on the upperside, and in the more distinct ochraceous-fuscous markings of the underside.

Mr. Hewitson, we find, referred a series of specimens of a *Cyrestis* from the Andamans to this species, and he justly said of them that for delicacy of colouring they were some of the most beautiful things he had ever seen.

30. *CYRESTIS FORMOSA*, Felder.

Cyrestis formosa, Felder, Reise Novara, Lep. vol. iii, p. 412, ♂.

——— *horatius*, W.-M. & de N., Proc. As. Soc. Bengal 1881, August, p. 142.

♂. Allied to *C. cocles*, with which it agrees almost exactly in the character of the markings of the upperside, but from which it differs in its pure white ground-colour painted with different shades of sepia-brown instead of pale ochraceous and ochraceous-fuscous and black, the black marks of *C. cocles* being represented by the darkest of the sepia colouring, in its larger and more distinct ocelli, and in having a distinct but pale fulvous patch at the anal angle of the posterior wing; and, on the underside, in having only the lightest portions of the sepia markings absent and replaced by white or whitish.

Length of anterior wing 1.16; whence expanse = 2.4 inches.

Nine specimens exactly alike from S. Andaman.

We have since received a tattered male specimen from Khurda, a place 25 miles S. S. W. of Cuttack, the chief town of Orissa, in Continental India.

31. *CYRESTIS THYODAMAS*, var. *ANDAMANICA*, nov.

We entered the name of this species in our previous list without remark because we had at the time but a single specimen before us and the characters which distinguish it from the typical continental form might have proved to be inconstant. We have since received a very large series of specimens of the male all agreeing perfectly with one another and differing from all continental (from Kulu to Upper Tenasserim) ones in the blacker apex and outer margin, in the prominent somewhat diffused black spot on the third median veinlet between the third and fourth common black strigæ at the point where these bend towards each other in the anterior wing; and in having the fulvous marks of the anal half of the abdominal margin, of the anal angle, and of the outer margin as far as the discoidal vein, of the posterior wing, much diffused and darker;—in having, in fact, all the markings and colouring darker and coarser both above and below.

32. *HYPOLIMNAS BOLINA*, Linn.

33. *HERONA ANDAMANA*, Moore.

34. *PARTHENOS GAMBRISIUS*, Fabr.

35. LIMENITIS PROCRIIS, var. ANARTA.

36. NEPTIS CNACALIS, Hewitson.

One male and two females.

37. NEPTIS JUMBA.

N. jumba, Moore, Cat. Lep. E. I. Co. 1857, vol. i, p. 167, pl. 4a, fig. 5; Proc. Zool. Soc. Lond. 1858, p. 7.

A male and a female from S. Andaman.

38. NEPTIS MANANDA, Moore.

39. NEPTIS ANDAMANA, Moore.

40. ATHYMA RETA.

Athyma reta, Moore, Proc. Zool. Soc. Lond. 1858, p. 12, pl. 50, fig. 3 ♂, from Sumatra.

Athyma selenophora, Kollar, Wood-Mason and de Nicéville, Journ. As. Soc. Bengal, 1880, vol. xlix, pt. ii, p. 229, ♀.

♀. Anterior wings above with the divided cellular mark, the triangular spot beyond this, a subapical largish spot, and a much smaller one just in front of the second median veinlet in the discal series, orange, and with the curved series of six discal spots white, diffusely bordered, from the costal margin increasingly and afterwards decreasingly to the inner margin, with orange.

Posterior wings with the discal band white decreasingly from the anterior margin narrowly edged externally with orange, and with the submarginal sinuous band narrower, broken up into lunules, and orange-coloured.

Length of anterior wing 1.44; whence expanse = 3.04 inches.

41. TANAECIA CIBARITIS, Hewitson.

42. ADOLIAS ACONTIUS.

Adolias acontius, Hewitson, Ann. and Mag. Nat. Hist. 1874, ser. 4, vol. xiv, p. 358; Exot. Butt. vol. v, *Adolias*, pl. iv, fig. 11, ♀.

Tanaëcia acontius, Moore, Proc. Zool. Soc. Lond. 1877, p. 586.—Wood-Mason and de Nicéville, Journ. As. Soc. Bengal, 1880, p. 229, ♀.

♂. Wings above almost black, the ground-colour being very dark brown of a bronzy tint, and the prominent cellular and basal marks, the outer margins, and the common discal and submarginal submacular bands velvety black, the former of the two last-named bounded externally at its anterior end by a series of four indistinct U-shaped white marks, and the latter provided at its inner and anterior extremity with two small elongated subcostal white spots (the posterior of which is the larger), and, in the posterior wings, composed of distinct subelongate spots each with an inconspicuous dash paler than the surrounding ground-colour at either end. The posterior wings strongly glossed with dark greenish-purple anteriorly.

Wings below much as in *A. garuda*, but all more strongly glossed with amethyst-purple submarginally and having their basal half coloured greyish-green and conspicuously marked with black as in the female.

Length of anterior wing 1.28; whence expanse = 2.72 inches.

The characters of the venation and the structure of the palpi remove this species from the genus *Tanaëcia*, in which it has been placed by Moore, to *Adolias*, whilst the form and colouration of the wings in the male assign it a position in the system next to, or in the immediate neighbourhood of, *A. garuda*, of which, indeed, the above described insect might, on a cursory view of the upperside, be mistaken for a black local race.

43. *SYMPHLEDRA TEUTA*, var. *TEUTOIDES*.

44. *NYMPHALIS ATHAMAS*, Drury.

Family ERYCINIDÆ.

*45. *ABISARA KAUSAMBI*, Felder.

46. *ABISARA BIFASCIATA*, Moore.

Our specimens of the female all agree with Moore's figure of the upperside, but they all have three anterior ocelli on the underside of the posterior wing; the front one, however, reduced to an almost rudimentary condition.

Our numerous males all have the discal light bands of the anterior wing less bent than in the females, but all except two (which have a rudiment of the foremost one) present only two ocelli in the anterior series; and our unique Nicobarese specimen agrees with them except in having the discal band if anything a little more angled.

It is probable that the two foregoing species will prove to be identical.

Family LYCÆNIDÆ.

47. *CURETIS THETYS*, var. *SARONIS*.

48. *PITHECOPS HYLAX*, Fabr.

49. *CASTALIUS ETHION*, Hewitson.

Four males and a female from S. Andaman.

50. *CASTALIUS ELNA*, Hewitson.

Three males and a female from S. Andaman, variable in the size and connections of the black spots and bands of the underside and wanting the minute black spot at the anterior end of the common white band of the upperside.

51. *CASTALIUS ROXUS*, Horsfield.

Three males and two females.

52. *LAMPIDES ÆLIANUS*, Fabr.

53. *LAMPIDES STRABO* (Fabr.), Butler.

A single male from S. Andaman.

*54. LAMPIDES KONDULANA, Felder.

55. LAMPIDES MALAYA.

Lycæna malaya, Horsfield, Cat. Lep. E. I. Co. 1829, p. 70.

One specimen from S. Andaman.

56. LAMPIDES ARDATES, Moore.

57. LAMPIDES ELPIS, Godart.

58. LAMPIDES PANDAVA, Horsfield.

59. LAMPIDES confer PACTOLUS.

60. LAMPIDES PLUMBEOMICANS, W.-M. & de N.

61. POLYOMMATUS SANGRA, Moore.

62. APHNÆUS LOHITA, var. ZOILUS.

63. HYPOLYCÆNA ERYLUS, Godart.

*64. HYPOLYCÆNA ELTOLA, Hewitson.

65. SITHON SUGRIVA, var. ARECA, W.-M. & de N.

Six more males and two females.

66. 'SITHON' WESTERMANNII, var. ANDAMANICA, nov.

Another male.

67. 'SITHON' TARPINA, Hewitson.

Three more males and two females.

68. 'SITHON' ALBIMACULA, n. sp.

♂. Anterior wings above brown-black of a vinous tint with a large conspicuous oval white discal spot equal in length to half the breadth of the part of the organ on which it lies, equally distant from the opposite margins, and so placed that its major axis and more pointed anterior end are directed towards the middle of the costa.

Posterior wings above dark violet-blue bordered increasingly from the base of the anterior margin to the apical angle and thence decreasingly to the anal angle with fuscous-black and from the submedian vein to the abdominal margin with greyish-black; with a fine black anteciliary line and, immediately internal to this, a very faint and fine silver-grey line decreasing from the anal angle and dwindling to nothing before reaching the apical angle; with the cilia dark brown evenly tipped with silvery white; and with the tails black-brown, the unequal submedian and second median shorter ones edged internally with silvery white cilia, and the longer intermediate first median one white-tufted at its inner extremity.

Wings below much lighter.

Anterior pair with a broad and prominent white band bordered both sides with fuscous of a darker shade than the rest of the ground-colour, passing off from the greyish-white basal portion of the sutural area across the organ to within a short distance of the costa, increasing in its course to a little beyond the first branch of the median vein and thence decreasing to its anterior extremity (which is washed with fuscous), so that its outline,

while almost straight internally, is bluntly obtuse-angled externally; and with the outer margin at the inner angle obsolete trilineated with white as in the posterior pair.

Posterior pair with a narrower and less conspicuous discal whitish band of uniform width throughout, not sharply defined, but on the contrary diffused externally, and bordered internally with a line of fuscous which is darker than the ground, sharply bent inwards at right angles to itself to the abdominal margin, and externally margined with brassy, at its posterior end; with the deep black spot of the small anal lobe, a large patch of grey scales between the ends of the submedian vein and the first median veinlet, an intense black spot next to and about half the size of this between the ends of the first and second median veinlets, and a very short and transversely elongated or narrow similar but inconspicuous black spot between the ends of the first and second median veinlets, all internally margined with a discontinuous line of brassy scales which extends from the point where the dark discal striga with its brassy edging reaches the abdominal margin all along the outer margin of the organs, following the inner contours of the above-described spots, up to the second subcostal veinlet; and with the external margin finely lineated with three regularly concentric silvery white lines separated from one another by the black anteciliary line and the brown bases of the cilia.

Length of the anterior wing .52; whence expanse = 1.09 inches.

A single male of this beautiful little species, the nearest ally of which is *M. ciniata*, Hewitson, Ill. Diurn. Lep. p. 35, pl. XIV, figs. 30, 31 ♀.

69. *DEUDORIX EPIJARBAS*, Moore.

70. *DEUDORIX DIENECES*, Hewitson.

71. *DEUDORIX VARUNA*, Horsfield.

72. *DEUDORIX ORSEIS*, Hewitson.

73. *MYRINA ATYMNUS*, var. *PRABHA*.

74. *AMELYPODIA NARADA*, var. *ERICHSONII*.

A single male with the upperside coloured the deepest and richest metallic violet bordered with fuscous-black exactly to the same extent and in just the same manner as, but more darkly than, in Calcutta specimens of *A. narada*. One of the females in the tint and extent of the blue of the upperside closely resembles Calcutta specimens of *A. narada*, but it is otherwise darkly and richly coloured as in the rest of the Andaman specimens.

75. *ARRHOPALA CENTAURUS*, var. *CORUSCANS*, W.-M. & de N.

Numerous additional males and females.

76. *ARRHOPALA AMANTES*.

Amblypodia amantes, Hewitson, Cat. Lyc. Brit. Mus. 1862, p. 4, pl. 2, figs. 1-3.

One small female.

*77. *ARRHOPALA NAKULA*, Felder.

78. *NARATHURA FULLA*, var. *ANDAMANICA*, nov.

Amblypodia fulla, Hewitson, Cat. Lyc. Brit. Mus. 1862, p. 10, pl. vi, figs. 67, 68 ♂, from Boirou.

Narathura fulla, var. *andamanica*, Wood-Mason and de Nicéville, Proc. As. Soc. Bengal, August, 1881, p. 143.

Narathura subfasciata, Moore, Trans. Entom. Soc. Lond. 1881, September, part iii, p. 312, ♂ ♀, from the Andamans.

♂. Wings above brilliant violet-cyaneous, all slightly more broadly bordered with black-fuscous than in Hewitson's figure of the typical form.

Wings below pale oeraceous-fuscous, with faint traces of a discocellular mark in both wings and of three or four basal spots in the posterior wings, besides the markings beyond the middle of the wings, darker than the ground-colour.

The end of the first submedian branch of the posterior wing forms a minute tooth on the outer margin.

This very slight variety seems intermediate between *N. fulla*, Hewitson, from Boirou, and *N. arsenius*, Felder, from Luzon.

Mr. Moore compares his species to *Amblypodia canuta*, Hewitson, a name which we have failed to trace.

79. *SURENDRA QUERCETORUM*, var. *LATIMARGO*.

*80. *AMBLYPODIA ZETA*, Moore.

Family PAPILIONIDÆ.

Subfamily PIERINÆ.

81. *TERIAS HECABE*, Linn.

82. *TERIAS HARINA*, Horsfield.

*83. *TERIAS NIKOBARIENSIS*, Felder.

We have received specimens from the Nicobars (*vide supra* p. 236), but none as yet from the Andamans.

*84. *HEBOMOIA GLAUCIPPE*, Linn.

85. *HEBOMOIA ROEPSTORFFII*, W.-M. Pl. XIV, Figs. 3 & 4 ♂, 5 ♀.

Since this species was described, we have received a very large series of both sexes.

86. *IXIAS ANDAMANA*, Moore.

87. *CATOPSILIA CATILLA* (Cramer), Butler.

One male only.

88. *CATOPSILIA CROCALE*, Cramer.

Two males with the apex of the anterior wings slightly more broadly bordered with black than in Butler's fig. 1, pl. ix, Lep. Exot., and two others approaching very closely his fig 4, representing *C. flava*, but with the apex of the anterior wings equally broadly black-bordered with

the two former, and the outer portion of all the wings, especially of the posterior ones, paler than the basal. Also two females.

- *89. CATOPSILIA CHRYSÆIS, Drury.
- 90. PIERIS NADINA, var. NAMA.
- 91. PIERIS CORONIS, var. LICHENOSA.
- 92. ERONIA VALERIA, var. NARAKA.
- 93. TACHYRIS PAULINA, Cramer.

Subfamily PAPILIONINÆ.

94. ORNITHOPTERA POMPEUS (? *rectius* HELIACON).

Mr. Moore does not inform us, and we have not succeeded in discovering, in what points his *Orn. heli[a]conoïdes* differs from the *Orn. pompeus* of Sikkim and Assam.

In one of our four males from Port Blair all the submarginal black spots of the posterior wings are wanting except the first or anal, which is fused with the marginal conical spot as it all but invariably is in Continental specimens; in another the second spot is present on the upperside only; in a third, the second and third, and in a fourth, the second, third, and sixth, while in the feminine male upon which Mr. Moore founded his *Orn. heliaconoïdes* the second, third, fifth, and sixth are present on both sides: all of which variations are to be met with in a sufficiently large series of Continental specimens, particularly in our own fine one from the Sikkim and Khasi Hills.

Of our five females two have the anterior wings conspicuously rayed with white like some Assam specimens, and three (two from the Little Brother Island and one from S. Andaman) have the veins of these wings either simply bordered both sides with paler black than the general ground-colour or only exhibit here and there faint traces of white scales like others from the southern slopes of the Khasi Hills (Sylhet).

The males which are least differentiated from the females in point of markings, also resemble them in the fuller and more broadly rounded inner angle of their anterior wings.

95. PAPILIO MAYO.

P. mayo, Atkinson, Proc. Zool. Soc. Lond. 1873, p. 736, pl. 63, fig. 1, ♂

P. charicles, Hewitson, Ann. and Mag. Nat. Hist. 1874, ser. 4, vol. xiv, p. 356, ♀; Exot. Butt. 1875, vol. v, pl. xiv, Pap. fig. 45, ♀.

The shape of the wings and the presence of red markings on the underside of the hinder pair prove that *P. mayo* is more closely allied to *P. androgeus* than to *P. polymnestor*; not a single red scale being to be detected in the hind wing of the latter except at the base of the organ, and the conspicuous blue-grey band on the upperside of the former being nothing more than an excessive development and concentration of the radiating

lines of grey scales with which *P. androgeus* is more or less conspicuously ornamented between the veins and folds of all its wings, but especially of the posterior pair, on the upperside. *P. mayo* is also adorned in the anterior wings with radiating shorter lines of luteous grey scales, a point not mentioned by Atkinson nor represented by him in his figure.

It is a well-known fact that the Continental *P. androgeus* is provided with three different forms of female, two tailless like the male and one tailed, which mimicks the red-spotted *P. doubledayi* just as the corresponding female of the closely allied *P. memnon* does the yellow-spotted *P. coon*. The two rare tailless females of its Andaman representative have not yet been detected; but there is no doubt whatever that in the *P. charicles* of Hewitson we have the commoner tailed form, which mimicks the red-tailed *P. rhodifer*. Our first specimens of the supposed two species were captured by the native collector Moti Ram in 1872 all together in the same spot; and all the numerous specimens (upwards of fifty in number) of *P. mayo* which have passed through our hands during the past two years are males, and all the (some 6 to 8) *P. charicles* females.

From these facts we can come to no other conclusion than that the two are the opposite sexes of one and the same species, and we accordingly unite them under the former as being the prior of these two names.

96. PAPILIO POLYTES, var. NIKOBARUS, Felder.

97. PAPILIO AGAMEMNON, Linn.

98. PAPILIO EURYPYLUS, Linn.

99. PAPILIO RHODIFER, Butler.

♀. Differs from the male in having all its wings broader, and the crimson of the posterior ones not quite so bright.

100. PAPILIO CLYTIA, var. FLAVOLIMBATUS. Pl. XIV, Fig. 1, 2, ♂.

We have since received many males and a female, the former all quite constant, and the latter differing from them only in its broader wings and in the paler fulvous markings of both sides of the posterior ones.

*101. PAPILIO ANTIPHATES, Cramer.

102. PAPILIO LÆSTRYGONUM, W.-M.

♀. Wings all lighter above in consequence partly of their greater breadth, partly of the bands and other black markings being narrower or less developed, and partly of the smaller extent of grey present on the posterior pair: the fifth forked black band not reaching the inner angle on either side and none of the bands of the anterior pair being connected by a black edging at the inner margin, and the two marginal and sub-marginal lunular bands of the posterior pair being smaller and less diffused and more distinctly divided from one another by light scales anteriorly on the upperside.

Length of anterior wing 1·8; whence expanse = 3·75 inches.

A single specimen.

103. PAPILIO PREXASPES.

P. prexaspes, Felder, Reise Novara, Lep. vol. i, p. 107, pl. xv, fig. d, ♂, from Malacca.—Oberthür, Etudes D'Entom. ivme livr. p. 46, ♂ ♀, from the Andaman Isles.

♀. Wings above lighter and dingier, much in fact, as in *P. chaon*, Westw., with the fascia of the underside of the anterior ones faintly indicated.

Anterior wings below with an incurved ashy-white fascia beyond the end of the cell, commencing near the costal margin, interrupted by the veins and folds, and rapidly decreasing to the third median veinlet, where it ends to recommence at the first, whence it increases to the submedian vein.

Tails of the posterior wings broader at the expanded extremity and narrower at the constricted portion, just as in *P. chaon* ♀ as compared with its males.

Length of anterior wing 2.35; whence expanse = 4.86 inches.

Seven males and two females.

Family HESPERIDÆ.

104. ISMENE CHROMUS, Cramer.

Andaman females all have only a single small semitransparent subapical speck between the last two branches of the subcostal of the anterior wing; but those from Continental India have sometimes one and sometimes two besides this on the disk of the same wing, which in one from Bangalore in South India are enlarged into two conspicuous reversed comma-shaped spots.

105. ISMENE MALAYANA, Felder.

The females have a small semitransparent yellowish discal speck between the two posterior branches of the median vein and of course lack the oblique band of short lines of modified scales seen in the males of this as well as of the preceding closely-allied species.

106. ISMENE ARIA, Moore.

107. ISMENE LEBADEA, var. ANDAMANICA, nov.

♂. Wings above dark brown of a slightly greenish tinge, all without spots.

Anterior wings bearing a huge and dense pear-shaped sericeous patch of setæ glossed with greyish-greenish and extending nearly from the bottom of the angle formed at the base of the organ by the subcostal and submedian veins about to the level of the end of the fourth fifth of the length of the latter vein, with all the setæ directed backwards and slightly outwards; with the costal margin purplish; the outer portion beyond the setulose patch bronzy; and the cilia pale luteous.

Posterior wings purple-glossed, with two subparallel raised discal longitudinal lines of modified scales attached to the apparently thickened bases of the first and second median veinlets, and with the cilia pale orange.

Anterior wings below bronzy-brown with a patch of brilliant amethyst-purple sparsely irrorated with white scales and extending from the end of the cell nearly to the apex of each organ, and with the basal portion of the wing-membrane behind the median vein and its first branch whitey-brown passing to ashy posteriorly, and with a tuft of brown-tipped yellow setæ arranged longitudinally upon and on each side of the basal half of the submedian vein.

Posterior wings below purple-glossed, darkest over the scent-glands, with an interrupted transverse discal band of white scales from near the abdominal margin to the middle of the organs, where it diffuses itself widely over a diffused patch of amethyst-purple.

♀. All the wings above and below paler and duller and glossed with purple, the anterior ones spotted.

Anterior wings suffused with purple on the disk, which bears three semitransparent yellow lustrous spots of the same size, relative proportions, and shape as in *C. attina*, Hew., with a fourth smaller and elongate yellow opaque spot placed just in front of the submedian vein rather beyond the middle of the organs.

♂. ♀. Eyes blood-red.

Antennæ purplish brown with the club bright luteous below.

Length of anterior wing ♂ 1.25, ♀ 1.25; whence expanse = ♂ 2.65, ♀ 2.65 inches.

The patch of setæ on the upperside of the anterior wings, the yellow tuft (which probably serves as a scent-fan) on the underside of the same wings, and the lines of modified scales (which probably cover the scent-glands as they seem soiled as if by some exuding fluid) on the upperside of the posterior wings are structures peculiar to the male sex.

108. *ISMENE DRUNA*, Moore.

♀. Differs from the male only in the absence of the sexual streak in the anterior wings.

In both sexes of this species the anterior wings are tipped with paler on both sides.

109. *ISMENE EXCLAMATIONIS*.

Hesp. exclamations (Fabr.), Butler, Cat. Diurn. Lep. Fabr. 1870, p. 269, pl. iii, fig. 2.

Numerous males and females.

110. *ISMENE HARISA*.

I. harisa, Moore, Proc. Zool. Soc. Lond. 1865, p. 782, ♂ ♀.

A single female.

111. ISMENE BADRA.

Goniloba badra, Moore, Proc. Zool. Soc. Lond. p. 778, ♂ ♀.

A single female in very fine condition.

112. TAGIADES ALICA, Moore.

Numerous specimens of both sexes.

113. TAGIADES RAVI, Moore.

114. TAGIADES MENAKA.

Pterygospidea menaka, Moore, Proc. Zool. Soc. Lond. 1865, p. 778, ♂ ♀, from 'N. E. Bengal.'

Male and female.

115. TAGIADES BHAGAVA, var. ANDAMANICA, nov. Pl. IV, Fig. 5, ♂.

Satarupa bhagava, Moore, Proc. Zool. Soc. Lond. 1865, p. 781, ♂, from 'N. E. Bengal.'

Numerous males and a female from S. Andaman.

♂. With the cream-coloured subbasal band of the posterior wings in one specimen narrower and not continued on to the anterior wings, in another as broad as in an Upper Tenasserim example, and continued faintly on to the anterior wings; with the spot at the end of the cell larger than in the female and not isolated from the fuscous outer margin; and with the transverse abdominal band concolorous with the subbasal.

♀. Wings above paler, with the spots of the anterior wings whiter and larger, and the band of the posterior ones pure white, much broader, and extending on to the anterior ones broadly up to the submedian vein and thence narrowly up to the first median veinlet between the two pairs of black spots.

Posterior wings with a black speck at the end of the cell on a white ground on both sides, and the two anterior of the semicircular series of black spots on the upperside nearly, but on the underside wholly, placed on the white subbasal band.

A specimen from the Sikkim Hills, 3000 feet, differs in having the band broader both on the posterior wings and between the two pairs of spots in the anterior ones.

116. PLESIONEURA ALYSOS, Moore.

Our specimens from S. Andaman, the Sikkim Hills, and the N. E. Frontier districts (Sibsagar, etc.,) all agree with one another in always having three conjugated obliquely placed subapical semitransparent spots and usually three in the reversed oblique series, the innermost of which is separated from the next to it by a greater interval than this is from the outermost, which latter is the absent one in those specimens with only two in the series.

Males and females.

117. PLESIONEURA PARALYSOS, n. sp.

Proc. As. Soc. Bengal, August 1881, p. 143.

♂. ♀. Closely allied to *P. alysos*, but differing therefrom, on the upper side of the anterior wings, in the discal oblique semitransparent white lustrous band being broader with less irregular margins, and in only one small spot, placed between the third median and the discoidal veinlet, midway between the discal band and the outer margin, being present; and, on the underside of the posterior pair, in having one or two small white opaque lustrous spots, one near the end of the cell, the larger and the more constantly present, and the other just beyond it between the first and second median veinlets.

Three males and one female.

Length of anterior wing ♂ .78, ♀ .82; whence expanse = ♂ 1.66, ♀ 1.74 inches.

Specimens from the Sikkim Hills; Sibsagar (*S. E. Peal*), Dhunsiri valley and Dafia Hills, Assam (*H. H. Godwin-Austen*); Trevandrum, S. India (*F. W. Bourdillon*), and Ceylon (*F. R. Mackwood*) are devoid of all traces of the spots on the lower surface of the posterior wings.

118. PLESIONEURA DAN, var. ANDAMANICA, nov.

Pap. dan, Fabr., Mant. Ins, ii, p. 88; *Hesperia fatih*, Kollar in Hügél's Kaschmir, vol. iv, pl. 18, figs. 5, 6.—*Plesioneura dan*, Moore, Proc. Zool. Soc. Lond. 1865, p. 789.

Our specimens from Port Blair differ from Continental ones in having the discal series of spots all run together so as to form an unbroken band, and the three subapical spots conjugated and in the same straight line, with their conjoined inner margin nearly straight and their outer festooned; and two examples exhibit in addition two smaller dots placed nearly parallel to the outer margin just below and external to the three subapical ones.

Numerous specimens.

119. PLESIONEURA LEUCOCERA.

Hesperia leucocera, Kollar in Hügél's Kaschmir, 1848, vol. iv, p. 454, pl. xviii, figs. 3, 4.

Plesioneura sumitra, Moore, Proc. Zool. Soc. Lond. 1865, p. 787, from N. E. Bengal.

———— *pulomaya*, Id., loc. cit. p. 787, from 'Darjeeling'.

———— *ambareesa*, Id., loc. cit. p. 788, from Maungbhoom, Bengal.

———— *chamunda*, Id., loc. cit. p. 788, from Bengal.

———— *putra*, Id., loc. cit. p. 788, from Bengal.

Our large series of specimens from the Sikkim Hills, Cherrapunji in the Khasi Hills, the N. W. Himalayas, Travancore, Ceylon, and S. Andaman furnishes us with an almost complete series of gradations between those with the smallest number and the greatest amount of coalescence and those presenting the largest number and the least coalescence of the spots on the disk of the anterior wings; moreover, the orange spots in the posterior wings are to the last degree capricious in their development, being

exceedingly prominent in some and totally wanting in others; not a single character, in fact, which we have chosen in our attempts to divide our series into local races has proved to be constant.

120. PLESIONEURA PRABA.

P. praba, Moore, Proc. Zool. Soc. Lond. 1865, p. 790, ♂ ♀.

Three males from S. Andaman.

121. HESPERIA CAHIRA, Moore.

The three females have, in addition to the eight spots present in males, a more or less well-developed triangular bright yellow opaque one touching the submedian rather beyond the middle of this, and appearing on the undersides as an imperfect band between that vein and the first median veinlet; and, moreover, have the whole underside thickly and evenly clothed with rufous-brown scales.

122. HESPERIA OCEIA, Hewitson.

♂. Wings above rich dark purple-brown with bronzy reflections.

Anterior wings typically with eight semitransparent pale yellow lustrous spots, namely, two, dot-like, at the end of the cell, of which the posterior is the larger, a third subquadrate, the largest of all, between the first and second median veinlets, a fourth, about half the size, between the second and third median veinlets, with a dot, the fifth, beyond and in front of it, and a series of three dots, the sixth, seventh, and eighth, in a series, in front of this again.

Posterior wings each with a conspicuous tuft of long dark brown pale-based setæ inserted into the wing membrane immediately behind the base of the subcostal trunk.

Wings below lighter and duller.

Anterior wings with a huge oval ashy patch of a most brilliant satiny lustre, occupying the middle four fifths of the portion of the organs between the median vein and the posterior margin, and in the middle of which is so placed as to be divided by the submedian vein a very much smaller oval patch of brown modified scales.

♀. Wings above paler and scarcely at all suffused with purple, with the setæ olive-green and the cilia pale luteous.

Anterior pair all but invariably with nine spots, an additional opaque one being present just in front of the submedian vein a little beyond the middle of the organs.

Wings below pure dead uniform olive-brown.

Length of anterior wing ♂ .74, ♀ .86; whence expanse = ♂ 1.63, ♀ 1.88 inches.

In the male of this species the basal tuft on the upperside of the posterior wings probably serves as the scent-fan, while the patch of modified scales on the underside of the anterior ones covers, and collects sponge-like the odorous fluid secreted by, subjacent glands.

Obs. The female has been described by Mr. Moore as that of his *H. cahira* (*vide supra*).

The male varies considerably in the number of spots in the anterior wings, while the female is almost constant. These variations may most conveniently be exhibited in such a formula as the following, in which the numerals 1, 2, 3, 4, 5, 6, 7, and 8 stand for the semicircular series of eight discal spots seen in typical examples numbered in the order of their succession from before backwards *inwards* and forwards, the cypher (0) wherever it occurs indicating that that particular spot the place of whose number it occupies is absent, and *x* representing the submedian additional spot all but invariably present in females only:—

♂.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8	}	Typical.
♂.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8		
♂.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8		
♂.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8		
♂.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8		
♂.	0 + 2 + 3 + 0 + 5 + 6 + 7 + 0		
♂.	0 + 2 + 3 + 4 + 5 + 6 + 7 + 8		
♂.	0 + 2 + 3 + 0 + 5 + 6 + 7 + 0		
♂.	0 + 2 + 3 + 0 + 5 + 6 + 7 + 8		
♂.	0 + 2 + 3 + 0 + 5 + 6 + 7 + 8		
♂.	0 + 2 + 3 + 0 + 5 + 6 + 7 + 8	}	Typical.
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + <i>x</i>		
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + <i>x</i>		
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + <i>x</i>		
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + <i>x</i>		
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + <i>x</i>		
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + <i>x</i>		
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + <i>x</i>		
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + <i>x</i>		
♀.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 0		

123. HESPERIA COLACA, Moore.

Two males and four females.

124. HESPERIA SALA.

Hesperia sala, Hewitson, Trans. Entom. Soc. Lond., ser. 3, vol. ii, 1866, p. 500, from Singapore.

♀. Wings above vandyke-brown with a very faint vinaceous tinge.

Anterior wings with four semitransparent white lustrous spots all close together in the middle of the disk, two in the cell, the posterior of which is double the size of the anterior, which is the smallest of all, another immediately behind and in the same straight line with these, quadrate, the largest of all, being fully double the size of the posterior of the two cellular ones,

and the fourth placed quincuncially between the second and third and rather smaller than the former of these.

Posterior wings immaculate.

Wings below paler, darkest around the spots in the anterior ones, all also suffused with vinaceous.

Anterior ones with the sutural area ashy and a large patch in the internommedian area whiter and showing through on the upperside as a somewhat diffused whitish speck.

Posterior wings clothed with ashy scales and bearing a cellular roundish spot darker than the ground-colour, around which spot are semicircularly arranged three or four similar ones, as in *H. divodasa*.

Cilia dusky-ashy.

Length of anterior wing .56; whence expanse = 1.23 inches.

Closely allied to *H. divodasa*, Moore.

The "three minute brown spots before the apex" of the anterior wings mentioned by Hewitson are not discernible in our two specimens; they correspond to the dark brown marks which bound the apical dots on both sides in some specimens of *H. divodasa*, and, consequently, represent the apical semitransparent dots of that species.

125. HESPERIA NAROOA.

H. narooa, Moore, Proc. Zool. Soc. Lond. 1878, p. 687, pl. 45, fig. 4, ♂ ♀, from Bombay and Ceylon.

A male agreeing exactly with Moore's figure, but not quite so perfectly with his description, five discal spots being described but only four figured.

Obs. This species is said by Mr. Moore to differ only in its larger size from the *H. contigua* of Mabille, a species which we have failed to trace in the literature.

126. HESPERIA ACROLEUCA, n. sp.

Telegonus acroleucus, Proc. As. Soc. Bengal, August, 1881, p. 143.

Hesperia hiraca, Moore, Trans. Ent. Soc. Lond. September 1881, p. 313, ♀.

♂. Wings above dark brown slightly suffused with vinous.

Anterior wings tipped with ashy-white and with three large semitransparent pale yellow quadrangular lustrous spots arranged as in *T. thrax*, namely, one in the cell with its outer margin bifestooned and its inner biscalloped, another larger and elongated below and partly under this between the first and second median veinlets, and a third, the smallest of the three, rhomboidal, between the second and third median veinlets, and with the cilia dusky at the apex, but gradually becoming pale yellow towards the inner angle.

Posterior wings darker towards the outer margin with all the cilia pale yellow.

Wings below paler and duller, suffused with purple on the disk, and ornamented, especially on the medial area of the posterior pair, with scattered ochreous setiform scales.

Antennæ black with the straight portion of the club broadly and conspicuously incompletely ringed with cretaceous white and the much shorter terminal hooked portion red internally.

♀. Differs from the male only in its larger size; and in not having the anterior wings tipped with ashy, nor the antennæ nearly so conspicuously ringed with white.

♂ ♀. Eyes blood-red.

Palpi with the terminal joint rudimentary.

Length of anterior wing ♂ 1·05, ♀ 1·09; whence expanse = ♂ 2·26, ♀ 2·32 inches.

127. *TELEGONUS THYRSIS*, Fabr.

The male of this species presents, on the upperside of each anterior wing, three lines of modified scales, namely, one along the posterior side of the median vein between the origins of its first and second branches, another on each side of the first median veinlet from the origin of this up to the second discal spot, and a third, also double, along an equal portion of the submedian vein, and a thick clothing of setæ paler than the ground-colour at the base of the internommedian area and a similar clothing of paler setæ on the middle three-fourths of the sutural area; and, on the underside, a conspicuous and equally long furry patch of pale-fulvous coarse setæ divided by the submedian vein.

Five males and a female.

128. *HALPE BETURIA*, Hewitson.

129. *PAMPHILA MATHIAS*.

Hesperia mathias (Fabr.), Butler, Cat. Fabr. Lep. Brit. Mus. 1869, p. 275, pl. 3, fig. 8, ♂.

The specimens referred to *H. chaya* in our previous list are now placed under this species.

130. *PAMPHILA PURREEA*.

P. purreea, Moore, Proc. Zool. Soc. Lond. 1877, p. 594, pl. lviii, fig. 10.

♀. Larger than the male, with the yellow discal band throughout in the posterior wings, but only in the internommedian area in the anterior ones, and the yellow portions of the cilia, especially towards the inner and anal angles, darker, inclining to orange.

Length of anterior wing ·55; whence expanse = 1·18 inches.

A male and a female.

131. *PAMPHILA GOLA*, Moore.

132. *PAMPHILA MESOIDES*, Butler.

133. *PAMPHILA AUGIAS*, Linn.

Two males.

EXPLANATION OF PLATE XIV.

- Fig. 1. *Papilio clytia*, var. *flavolimbatus*, Oberthür. ♂. Upperside.
 " 2. _____ ♂. Underside.
 " 3. *Hebomoia roepstorffii*, W.-M., ♂. Upperside.
 " 4. _____ ♂. Underside.
 " 5. _____ ♀. Upperside.

XVII.—Description of a new Species of Rostellaria, from the Bay of Bengal.—By GEOFFREY NEVILL, C. M. Z. S.

[Received November 3rd ;—Read December 7th, 1881.]

ROSTELLARIA DELICATULA, n. sp.

Distinguished at once from all the other living species of the genus by its thin, delicate, and translucent substance, in these respects showing a highly important approach to some fossil forms. Colour a pale ochraceous brown lined on the last whorl with four narrow white bands, each of which terminates in one of the four projecting digitate processes of the outer lip, one only of these bands appearing in the middle of the preceding four whorls ; spire not quite half the entire length, apex moderately acute ; whorls $10\frac{1}{2}$, moderately convex, the last conspicuously convexly tumid and like the preceding one, marked with a slight sutural depression, produced at the base into a short canaliculation, relatively less developed than in any of the other known species, this "canal" is slightly tortuously deflected, more conspicuously so than in *R. magnus* (Chemnitz) ; the first three or four whorls are sculptureless, the next three or four inconspicuously but regularly spirally striated, striae about ten in number, filiform and slightly punctured, becoming obsolete on the last two whorls, except at the base of the last of all, where they reappear more coarsely developed than before ; there are also five varices, somewhat inconspicuous, at intervals on the last four whorls, which also show, under a lens, minute longitudinal striation, the striae close set, fine, and flexuous ; aperture oval, rather large, with the peristome thickened and denticulated with four equidistant, relatively somewhat small, digitate processes.

Long. 76, diam. 28 ; from the apex to suture of the last whorl $29\frac{1}{2}$, from base of the aperture to end of the "canal" $6\frac{1}{2}$ mill.

This highly interesting and very characteristic form, quite unlike any of the other seven known living species of the genus [as restricted] was dredged in deep water off Cheduba, Arrakan Coast, by Surgeon J. Armstrong, late Naturalist to the Indian Marine Survey.



Behari Lal Dos del.

Wool, Newman & Co. del. lith.

Figs. 1 2 PAPILIO CLYTIA, var. FLAVOLIMBATUS ♂.
Figs. 3 4 ♂ 5. ♀ HEROMOIA ROEPSTORFFII.